

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

Claim 1-69 (canceled).

70. (new) A cooling system for a computer system processing unit, comprising:

an integrated element and a heat radiator,

wherein the integrated element comprises a heat exchanging interface, a reservoir, and a pump;

wherein the reservoir is adapted to receive a cooling liquid from an inlet and pass the cooling liquid to an outlet, the reservoir comprising a plurality of channels adapted to direct flow of the cooling liquid across the heat exchanging interface;

the heat radiator is connected between the outlet and the inlet and is adapted to exhaust heat from the cooling liquid;

the heat exchanging interface is adapted to provide thermal contact between the processing unit and the cooling liquid, such that heat is dissipated from the processing unit to the cooling liquid as the cooling liquid passes across the heat exchanging interface; and

the pump is adapted to pump the cooling liquid through the reservoir and the heat radiator, and the pump comprises an impeller mechanically integrated with a pump rotor, wherein the impeller is submerged in the cooling liquid and is adapted to communicate the cooling liquid into the plurality of channels.

71. (new) The cooling system of claim 70, wherein the impeller is disposed in a recess sized in relation to a diameter of the impeller, and comprising a recess inlet and a recess outlet, wherein the impeller is further adapted to pass the cooling

liquid from the recess inlet, through the recess outlet and into the plurality of channels.

72. (new) The cooling system of claim 71, wherein the plurality of channels are formed integral to the reservoir or integral to the inner surface of the heat exchanging interface.

73. (new) The cooling system of claim 70, wherein the pump is disposed entirely within the reservoir.

74. (new) The cooling system of claim 70, wherein the pump is disposed at least partially outside the reservoir.

75. (new) The cooling system of claim 71, wherein the recess inlet is disposed proximate the heat exchanging interface and is structurally adapted to generate a turbulent flow of cooling liquid across the heat exchanging interface.

76. (new) The cooling system of claim 71, wherein the recess outlet is disposed proximate the heat exchanging interface and is structurally adapted to generate a turbulent flow of cooling liquid across the heat exchanging interface.

77. (new) The cooling system of claim 70, wherein the pump comprises a pumping member disposed proximate the heat exchanging interface and is structurally adapted to generate a turbulent flow of cooling liquid across the heat exchanging interface.

78. (new) The cooling system of claim 70, wherein the pump comprises one selected from a group consisting of: a bellows pump, centrifugal pump, diaphragm pump, drum pump, flexible liner pump, flexible impeller pump, gear pump,

peristaltic tubing pump, piston pump, processing cavity pump, pressure washer pump, rotary lobe pump, rotary vane pump and electro-kinetic pump.

79. (new) The cooling system of claim 70, wherein the pump comprises driving means driving the pump, the driving means comprising one selected from a groups consisting of: an electrically-operated rotary motor, a piezo-electrically operated motor, permanent magnet-operated motor, fluid-operated motor, and capacitor-operated motor.

80. (new) The cooling system of claim 79, wherein the driving means is further adapted to drive a fan associated with the reservoir.

81. (new) The cooling system of claim 79, wherein the driving means is further adapted to drive a fan associated with the heat radiator.

82. (new) The cooling system of claim 79, wherein the driving means is further adapted to drive a fan associated with the reservoir and a fan associated with the heat radiator.

83. (new) The cooling system of claim 70, wherein the reservoir further comprises a segmented heat sink disposed in thermal contact with the cooling liquid.

84. (new) The cooling system of claim 70, wherein the heat exchanging interface comprises a surface disposed in close thermal contact with the processing unit.

85. (new) The cooling system of claim 70, where the heat exchanging interface comprises a surface of the processing unit disposed in direct contact with the cooling liquid.

86. (new) The cooling system of claim 70, wherein the heat exchanging interface comprises an element adapted such that when secured to the reservoir the element comprises a part of the reservoir, and further adapted to be separable from the reservoir.

87. (new) The cooling system of claim 70, wherein the heat exchanging interface comprises an integrate part of the reservoir disposed in close thermal contact with the processing unit.

88. (new) The cooling system of claim 1, wherein the reservoir comprises an aperture exposing the cooling liquid, and wherein the heat exchanging interface comprises a surface of the processing unit adapted to fit into the aperture, such that the surface is disposed in direct contact with the cooling liquid.